

# IDAHO FISH SCREENING IMPROVEMENT (SEE NEW NPPC)

9401500

## SHORT DESCRIPTION:

Enhance passage of juvenile and adult salmon in Idaho's Anadromous fish corridors by consolidating and screening diversions.

## SPONSOR/CONTRACTOR: IDFG

Idaho Department of Fish and Game  
Patrick Marcuson, Upper Salmon River Anadromous Fish  
Passage  
Salmon, ID 83467-1336  
208/756-6022

PMarcuson@IDFG.STATE.ID.us

## SUB-CONTRACTORS:

Model Watershed of Idaho; Custer, Lemhi, Blaine County  
Soil and Water Districts

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## GOALS

### GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection, Adaptive management (research or M&E), Program coordination or planning, Conserves water

### WATERSHED:

Implementation

### ANADROMOUS FISH:

Habitat or tributary passage, O&M

### RESIDENT FISH:

Habitat

### NPPC PROGRAM MEASURE:

7.10A.5

### RELATION TO MEASURE:

Enhance passage of juvenile and adult salmon in Idaho's Anadromous Fish corridors by consolidation and screening diversions.

### OTHER PLANNING DOCUMENTS:

Snake River Salmon Recovery Plan and Columbia River Basin Fish and Wildlife Programs. 1.2.b.

### TARGET STOCK

Bull Trout  
Snake River Steelhead  
Snake River Spring Chinook  
Sockeye Salmon

### LIFE STAGE

All Stages  
All Stages  
All Stages  
Adult and Smolt

### MGMT CODE (see below)

(W)(P)  
(P)  
(L)  
(L)

### AFFECTED STOCK

All resident fish

### BENEFIT OR DETRIMENT

Beneficial

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## BACKGROUND

### STREAM AREA AFFECTED

#### Stream name:

Salmon and Clearwater

#### Subbasin:

Snake

#### Stream miles affected:

775 and 310

#### Land ownership:

Public and Private

**Hydro project mitigated:**

All mainstream Columbia and Snake River Hydro  
Dams

**Habitat types:**

Rivers, streams and some artificial channels

**HISTORY:**

This project was started as a high priority ESA effort to improve screens and anadromous fish passage in Idaho tributaries with threatened or endangered species impacts.

**BIOLOGICAL RESULTS ACHIEVED:**

ht irrigation diversion dam )Saved countless numbers of anadromous and resident fish from mortality in irrigation canals.

**PROJECT REPORTS AND PAPERS:**

Project output is reported through Annual FSOC report under project 92-028-00 and quarterly reports to NOAA grants.

**ADAPTIVE MANAGEMENT IMPLICATIONS:**

Ditch consolidations reduce instream diversion barriers, assist with river channel stabilization, and conserves water. Good headgates conserve water and reduce conveyance losses. Projects increase access to fish and wildlife habitat. Confining anadromous spawners instream increases nutrients, carcass N&P, and food to resident fisheries. Sites are constructed to consider fish and wildlife compatibility, i.e., wetlands, white tail, non-game habitat. Stream bank stabilization and habitat improvement by fencing project sites. (If shorter answer reply needed, then: ) This program is a positive, protective, proven management action.

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**PURPOSE AND METHODS****SPECIFIC MEASUREABLE OBJECTIVES:**

Complete designs, construction, installations of all unscreened and obsolete gravity and pump intakes in Idaho's anadromous fish corridors. Delete gravel berm diversions by consolidation of ditches, conversions to wells on as many sites as possible. Place screens to maximize potential rearing habitat if available in the ditch.

**CRITICAL UNCERTAINTIES:**

Preventing emigration of fish species into irrigation diversions may not reverse population declines in areas where dewatering occurs. Anadromous fish may not return to Idaho spawning and rearing habitats as a result of downstream limitations.

**BIOLOGICAL NEED:**

Screening to NMFS criteria is a proven technique of preventing fish mortality. Gravel berm diversions made annually of in-river gravel not only block the channel to migrating fish, but cause severe biological, thermal, and morphological alterations. The Lemhi River is a classic example of gravel berms washing down river and settling out in low gradient reaches. These accumulations of gravel force the channel to seek a new course of less resistance.

**HYPOTHESIS TO BE TESTED:**

Losses of fish species to irrigation diversions impact the welfare of the fishery and aquatic ecosystem. Gravel berm diversions impede migration of adult and juvenile anadromous fish and disrupt the aquatic ecosystem.

**METHODS:**

Each year a technical work committee establishes and prioritizes a list of diversions needing new or replaced screens. From this list the program coordinator determines all phases of work required and what agencies (see cooperation list) will participate and when to accomplish the project. The program coordinator then determines what functions will be financed by Mitchell Act funds, by participating irrigators, and by BPA funds. All sites require an access easement, flow agreements with irrigators, site surveys, design, awards to contractors, construction inspection, screen and component fabrication and installation. Associated duties may require providing access to site, headgate and ditch modifications, site vegetative enhancements, well drilling, pump intake screening, operation and maintenance, demolitions of old screens, and evaluations of the systems performance. Presence or

absence of fish on the downstream side of screens is verified by live trapping or visual observation.

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## PLANNED ACTIVITIES

### SCHEDULE:

<u>Planning Phase</u>	<u>Start</u> 1994	<u>End</u> 2001	<u>Subcontractor</u>
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<u>Task</u> 1998 Prioritize list of 50+ gravity diversions sites to screen, consolidate or eliminate. Locate, inspect, and install screens on 50 or more pump intakes. Topographic Surveys of 50 to 100 sites until completed. Maintain and operate 250 screens. Design, construct, and operate 50+ gravity diversion screens. Install safety fencing around sites near public access. Inform public via news releases, displays and informative signs on some screens. 1998-2001 Same activities with more emphasis on alternative, less expensive and more efficient screen types (see 10.2c proposal). More emphasis on riparian improvements and use of some channels for fish habitat.			
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<u>Implementation Phase</u>	<u>Start</u> 1994	<u>End</u> 2001	<u>Subcontractor</u>
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<u>Task</u> Continue replacing screens not at NMFS criteria			
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<u>O&amp;M Phase</u>	<u>Start</u> 1994	<u>End</u> +yrs	<u>Subcontractor</u>
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<u>Task</u> Keep all 250-350 screens operating along with providing access to screens and headgate facilities			
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### PROJECT COMPLETION DATE:

2001

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## OUTCOMES, MONITORING AND EVALUATION

### SUMMARY OF EXPECTED OUTCOMES

#### Expected performance of target population or quality change in land area affected:

Upon completion all gravity diversions and pump intakes will be screened to keep anadromous fish anadromous and resident fish residents of the streams in Idaho. Many of the ditches will be eliminated and/or consolidated to save water and reduce instream migrational barriers. Potentially dangerous screens will be fenced to minimize harm to animals and humans. Fish habitat around screened areas will be enhanced where streambank vegetation is allowed to perpetuate.

#### Present utilization and conservation potential of target population or area:

Tribal utilization in subdrainage. Coastal commercial and recreational fisheries.

#### Assumed historic status of utilization and conservation potential:

Sport fish product in subdrainage.

#### Long term expected utilization and conservation potential for target population or habitat:

Desired expectation is a self sustaining, harvestable population.

#### Contribution toward long-term goal:

Prevent mortality due to loss to irrigation channels. All Stocks

#### Physical products:

+ 250 functioning fish screens and headgates with access roads, gates and associated components.

#### Environmental attributes affected by the project:

Instream habitat improvement, bank stabilization due to fencing riparian area.

#### Changes assumed or expected for affected environmental attributes:

Reduced mortality and delays of migrating stocks of fish.

**Assessment of effects on project outcomes of critical uncertainty:**

Presence or absence of any target population.

**Information products:**

The screens show an actual product and are readily viewable to the general public, landowners, scientific, and recreational land users.

**Coordination outcomes:**

On the ground, positive, protective, proven management action.

**MONITORING APPROACH**

Each year a technical work committee establishes and prioritizes a list of diversions needing new or replaced screens. From this list the program coordinator determines all phases of work required and what agencies (see cooperation list) will participate and when to accomplish the project. The program coordinator then determines what functions will be financed by Mitchell Act funds, by participating irrigators, and by BPA funds. All sites require an access easement, flow agreements with irrigators, site surveys, design, awards to contractors, constriction inspection, screen and component fabrication and installation. Associated duties may require providing access to site, headgate and ditch modifications, site vegetative enhancements, well drilling, pump intake screening, operation and maintenance, demolitions of old screens, and evaluations of the systems performance. Presence or absence of fish on the downstream side of screens is verified by live trapping or visual observation.

**Provisions to monitor population status or habitat quality:**

Evaluations are simple and only require examination of presence or absence of fish behind fish screens. Habitat improvement is monitored by photographic records.

**Data analysis and evaluation:**

The only data collected will be reviewed by the fisheries managers.

**Information feed back to management decisions:**

Through quarterly and annual status reports and by constant involvement of the fisheries management staff.

**Critical uncertainties affecting project's outcomes:**

More evaluation of screens intended purpose. Continued efforts to find alternatives to screening ditches.

**EVALUATION**

Through annual project and fish oversight committee reports, and show-me trips.

**Incorporating new information regarding uncertainties:**

Through a technical work group.

**Increasing public awareness of F&W activities:**

Fish screens are readily observable, some are signed and most have enough public interest to be included in periodic news releases. Every irrigator and their families are aware of the fish screen and its intended purpose.

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**RELATIONSHIPS**

**RELATED BPA PROJECT**

**RELATIONSHIP**

9200900; 9105700; 9107500; 8402400; 9107200; 9405000; 9202800; 9401700; 9202603; 9402700 Yakima Screens; Marsh/Elk/Upper Salmon; Red Fish Lake Sockeye; Salmon River Habitat; Regional Fish Screening; Model Watershed Habitat; Grande Ronde Model Watershed:

Anadromous fish passage The project started in 1983 (as project 8300600 Operation and Maintenance of BPA Fish Marking Trailers). In 1995, projects 8906500 and 8300600 were combined and the USFWS has marked over 25.5 million fish for evaluation in the Columbia River ba

#### **RELATED NON-BPA PROJECT**

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SCREEN AND FISHWAY OPERATION AND MAINTENANCE.

#### **RELATIONSHIP**

OPERATION AND REPAIR, REPLACEMENT AND MAINTENANCE OF FISH SCREENS AND FISH PASSAGE FACILITIES FOR STATE OF IDAHO, IDFG

#### **OPPORTUNITIES FOR COOPERATION:**

This project is a cooperative effort of the Idaho Department of Water Resources, IDWS, the Bureau of Reclamation, USBR, the U.S. Forest Service, USFS, the Sawtooth National Recreation Area, SNRA, the Model Watershed Program, the Natural Resource Conservation Service, NRCS, the Shoshone-Bannock Tribes, Bureau of Land Management, BLM and the irrigators in the state of Idaho. NOTE The BPA and NMFS should have a Bio Opinion ID number to cover the Screen Programs in Washington, Idaho and Oregon. I would appreciate a copy of such coverage as some of the cooperating agencies are required to receive permitting under the Bio opinion to allow us the opportunity to work in their are of jurisdiction.

#### **COSTS AND FTE**

**1997 Planned:** \$300,000

#### **FUTURE FUNDING NEEDS:**

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$2,000,000		80%	20%
1999	\$2,000,000		80%	20%
2000	\$2,000,000		80%	20%
2001	\$1,000,000		80%	20%
2002	\$500,000		80%	20%

#### **PAST OBLIGATIONS (incl. 1997 if done):**

<u>FY</u>	<u>OBLIGATED</u>
1994	\$749,716
1995	\$593,400
1996	\$701,000
TOTAL:	\$2,044,116

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

<u>FY</u>	<u>OTHER FUNDING SOURCE</u>	<u>AMOUNT</u>	<u>IN-KIND VALUE</u>
1998	Mitchell Act - NOAA	\$1,500,000	
1999	Mitchell Act - NOAA	\$1,500,000	
2000	Mitchell Act - NOAA	\$1,500,000	
2001	Mitchell Act - NOAA	\$1,500,000	

#### **OTHER NON-FINANCIAL SUPPORTERS:**

Natural Resources Conservation Service; US Forest Service; Idaho Model Watershed; US Bureau of Reclamation; US Bureau of Land Management; Lemhi County.

#### **LONGER TERM COSTS:**

2002 - 500,000 - 50% implementation - 50% operation and maintenance  
 2003 - 500,000 - 50% implementation - 50% operation and maintenance  
 2004 - 500,000 - 50% implementation - 50% operation and maintenance.

**1997 OVERHEAD PERCENT:** 28%

**HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:**

Operation and maintenance only

**CONTRACTOR FTE:** 14 permanent; +24 temporary

**SUBCONTRACTOR FTE:** variable 5 to 10

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